

Weekly Report

2016.05.30-2016.06.05

1.This Week

Graduation

- 1.Finish my final graduation report.

Survey

- 1.Polish and check my survey again and again.

Security Project

1. Have a meeting with the Dr. Yao in Beijing and discuss about their demands.
2. Survey the softwares and materials related to this project.
3. Read the documents given by Dr. Yao to have a better understanding of this project.
4. Have a short meeting with our project group to figure out what we can do right now.

Paper Reading

1. Using and Exploring Hierarchical Data in Spreadsheets - ACM CHI 2016

Figure 2 consists of six screenshots of a spreadsheet application, labeled 1 through 6, illustrating the steps to compute summaries of a JSON file of conference papers.

Table 1: Initial data grouped by paper title (Column A).

A (paper_title)	B (authors.name)	C (authors.institution)
Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	1.1 Trevor Perrier	1.1 University of Washington
	1.2 Nicola Dell	1.2 University of Washington
	1.3 Brian DeRenzi	1.3 University of Washington
	1.4 Richard Anderson	1.4 University of Washington
	1.5 John Kinuthia	1.5 University of Nairobi
	1.6 Jennifer Unger	1.6 University of Washington
	1.7 Grace John-Stewart	1.7 University of Washington
Long-Term Use of Motion-Resistant Graphical User Interfaces	2.1 Kathrin M Gerling	2.1 University of Lincoln

Table 2: Data regrouped by institution (Column A).

A (authors.institution)	B (paper_title)	C (authors.name)
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	1.1 Trevor Perrier
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	2.1 Nicola Dell
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	3.1 Brian DeRenzi
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	4.1 Richard Anderson

Table 3: Context menu for grouping columns.

A (authors.institution)	B (paper_title)	C (authors.name)
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	1.1 Trevor Perrier
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	2.1 Nicola Dell
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	3.1 Brian DeRenzi

Table 4: Data grouped by institution.

A (authors.institution)	B (paper_title)	C (authors.name)
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	1.1 Trevor Perrier
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	1.2 Nicola Dell
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	1.3 Brian DeRenzi
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	1.4 Richard Anderson
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	1.5 Jennifer Unger
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	1.6 Grace John-Stewart

Table 5: Data grouped by institution with a new count column.

A (authors.institution)	B (paper_title)	C (authors.name)
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	1.1 Trevor Perrier
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	1.2 Nicola Dell
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	1.3 Brian DeRenzi
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	1.4 Richard Anderson
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	1.5 Jennifer Unger
University of Washington	Engaging Pregnant Women in Kenya with a Hybrid Computer-Human SMS Communication System	1.6 Grace John-Stewart

Table 6: Data sorted by count.

A (authors.institution)	B (paperCount)	C (paper_title)	D (authors.name)
Carnegie Mellon University	35	3D Printing Pneumatic Device Controls with Variable Activation Force Capabilities	1.1.1 Marynel Vázquez
		A Layered Fabric 3D Printer for Soft Interactive Objects	1.1.2 Ruta Desai
		A Spoonful of Sugar? The Impact of Guidance and Feedback on Password-Creation Behavior	1.1.3 Chris Harrison
			1.2.1 Jennifer Mankoff
			1.2.2 Scott E Hudson
			1.3.1 Richard Shay
			1.3.2 Lupo Bauer

Figure 2. Six tables showing how the user can compute summaries of a JSON file of conference papers. (1) The data initially is indexed by paper titles. Each paper has multiple authors. Each author has an institution. The user regroupes the data by institutions by dragging the institutions to the beginning of the table (2), right-clicks column A and chooses “Group Column B-C by Column A” (3) to merge rows that have the same value in column A (4). Column B now has many repeated values as a paper can have many authors from the same institution. (5) The user groups the data again by column B to merge repetitive paper titles within an institution. Lastly, (6) the user inserts a new column at column B, enters =COUNT (C1) in B1 to get the paper count for the first institution, and autofills the value for the rest of the institutions. She sorts the data by column B to bring the institution that has the most papers to the top.

This paper introduces novel interaction techniques and algorithms to manipulate and visualize hierarchical data in a spreadsheet using the data's relative hierarchical relationships with the data in its adjacent columns. This tool leverages the data's structural information to support selecting, grouping, joining, sorting and filtering hierarchical data in spreadsheets.

Inspiration: When we are dealing with hierarchical data in our visualization system (e.g. radial hierarchical tree layout, tree map etc.), we can provide similar interaction techniques to support re-indexing, sorting, filtering and grouping demands for users to generate a clearer view of the structural information of the dataset. Some visualization systems we developed nowadays lack appropriate and comfortable user interaction, but interaction itself is a significant part of visualization, to which we need to attach great importance.

p.s. This week I paid most of my attention to my survey polishing and Security Project preparing and dropped my paper reading plan. Next week I'll read more papers.

2.To Do

- (1) Finish the survey.
- (2) Work on the patent document.
- (3) Keep up with the security project.